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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,448	06/02/2005	Rob A. Beuker	NL02 1323 US	2666

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EXAMINER	
MA, CALVIN	

ART UNIT	PAPER NUMBER
2629	

NOTIFICATION DATE	DELIVERY MODE
03/19/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No.	Applicant(s)	
	10/537,448	BEUKER ET AL.	
	Examiner	Art Unit	
	CALVIN C. MA	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 January 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on 1/5/2009 has been entered and considered by the examiner. In view of the amended claim limitation the new prior art Hunter et al. US Patent 7,071,978.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3 and 5-16 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hunter et al. (US Patent: 7,071,978).

As to claim 1, Hunter teaches a method for improving the perceived resolution of a color matrix display with at least one pixel, comprising the steps of (i.e. the display device 90 is able to display a full color JPEG display therefore, it must have at least one pixel) (see Fig. 6, Col. 7, Lines 15-53):

subdividing an incident color channel signal to said pixel into a first and second signal component (i.e. the color channel R G B of the original image that is taken by the camera that is converted to high frequency and low frequency component and then displayed on the screen 90) (see Fig. 5-6, Col. 5, Lines 35-50),

applying a gain factor (i.e. sharpening gain) to one of said signal components (i.e. the sharpening gain that is applied to the high frequency components) (see Fig. 6, Col. 7, Lines 1-34), the gain factor being based upon the incident color channel signal's contribution to total luminescence of the display (i.e. the gain factor is created to adjust the luminescence value of the image in each of the element according to the lookup table, this means the gain factor is based on the contribution of the different element and its respective luminescence contribution) (see Fig. 6-7) (Col. 7, Lines 10-15),

subsequently recombining said first and second signal components into an exiting, modified color channel signal (i.e. the high and low frequency components are separately treated and then recombined into a final image which is then displayed on the display 90) (see Fig. 5-6, Col. 7, Line 1-53).

Even if it is later found that Hunter does not explicitly teach all of the claimed elements, one of ordinary skill in the art at the time the invention was made would have appreciated that the gain factor of Hunter's system can be modified to adjust the image element according to customizable lookup table (see Col. 7, Lines 10-15).

As to claim 7, see claim 1 above, claim 7 is analyzed to differ from claim 1 only in the limitation of a color matrix display device, since Hunter teaches a color matrix display device, it is rejected on the same ground (i.e. the camera device having a image display 90) (see Fig. 6).

As to claim 12, Hunter teaches a color matrix display device (i.e. the camera device having an image display 90) for displaying images, the device comprising:

a plurality of pixels controlled by applied color channel signals (i.e. the matrix display system 90); and

a controller (72) including:

a subdivision unit to subdivide, for separated color channel signals, each color channel signal into a first and second signal component (i.e. the function block that separate the high and low components of the image data),

a gain factor application (i.e. the quality gain factor application DSP process) to apply, for each color channel signal (i.e. all three color R G B), a gain factor to one of said components, the gain factor having a value that is inversely proportional to the contribution of the color channel signal to the total luminance of the color matrix display device (i.e. the gain factor is created to adjust the luminescence value of the image in each of the element according to the lookup table and since the gain is created to sharpen the image the luminance of each of the color component and the relative gain multiplier can be set to inverse relationship for the look up table to create sharper image

output by distributing the component's effect more evenly) (see Fig. 6-7) (Col. 7, Lines 10-15), and

a recombination unit to recombine, for each color channel signal, said first and second signal component into a modified color channel signal that is used to control said plurality of pixels (i.e. the high and low frequency components are separately treated and then recombined into a final image which is then displayed on the display 90) (see Fig. 5-6, Col. 7, Line 1-53).

Even if it is later found that Hunter does not explicitly teach all of the claimed elements, one of ordinary skill in the art at the time the invention was made would have appreciated that the gain factor of Hunter's system can be modified to adjust the image element according to customizable lookup table (see Col. 7, Lines 10-15).

As to claim 2, Hunter teaches a method according to claim 1, wherein said first and second signal components are a low-pass component and a high-pass component, respectively (i.e. the high and low frequency components are separately treated and then recombined into a final image which is then displayed on the display 90) (see Fig. 5-6, Col. 5, Line 33-54).

As to claim 3, Hunter teaches a method according to claim 2, wherein said gain factor is applied to said high-pass component (i.e. the gain factor is applied to the high

components in the form of the color correction matrix during color correct phase) (see Fig. 5-6, Col. 5, Line 33-54).

As to claim 5, see claim 7 above, claim 5 is rejected for the same reason as claim 7.

As to claim 6, Hunter teaches a method according to claim 1, further comprising the step of: transmitting said exiting, modified color channel signal to a delay (i.e. the image is placed into long term memory 88 from the microprocessor/DSP 72) (see Fig. 11) and up or downsampling block in order to provide the modified color channel signal with a suitable delay and scaling (i.e. the image is retrieved from the Long term memory 88 back into the microprocessor/DSP 72 and than display on the display 90, in this process the color image must be up or down sample to be properly fitted onto the display regardless of the image size on memory) (see Fig. 5-6, Col. 5, Lines 33-57).

As to claim 8, Hunter teaches color matrix display device as in claim 7, being arranged to perform the method according to claim 1 (i.e. since the same digital camera system satisfy the limitation of both claim 1 and 7 it also satisfy the combination of the two) (see Fig. 5).

As to claim 9, Hunter teaches a method according to claim 1, wherein the step of subdividing each of separate color channel signals for an image into a first and second signal component (i.e. the high and low frequency components are separately treated and then recombined into a final image which is then displayed on the display 90) (see Fig. 5).

As to claim 10, Hunter teaches a method according to claim 1, wherein the step of subdividing each of separate color channel signals for an image into a first and second signal component (i.e. the high and low frequency color signal components are separately treated) (see Fig. 5-6).

wherein applying a gain factor includes applying a gain factor to each separate color channel signal that is inversely proportional to the contribution of said separate color channel signal to the total luminance of the color matrix display (i.e. the gain factor is created to adjust the luminescence value of the image in each of the element according to the lookup table and since the gain is created to sharpen the image the luminance of each of the color component and the relative gain multiplier can be set to inverse relationship for the look up table to create sharper image output by distributing the component's effect more evenly) (see Fig. 6-7) (Col. 7, Lines 10-15).

As to claim 11, Hunter teaches a method according to claim 1, wherein the step of subdividing includes subdividing a number N (i.e. N=2) of different color channel signals, and

the step of applying a gain factor includes applying a gain factor, for each color channel signal, that is about equal to the value of 1/2 multiplied by the reciprocal contribution of the channel signal to the total luminance of the color matrix display (i.e. since the total picture color correction is equal to the summation of both the high and low band color signal the application of gain factor is the total contribution of the both parts of the signal) (see Fig. 5, Col. 5, Lines 33-57).

As to claims 13 and 15, Hunter teaches wherein applying a gain factor includes applying a gain factor that removes a visible aliasing term from the incident color channel signal (i.e. Hunter teaches the usage of the gain application method will remove color aliasing in the image) (see Col. 3, Lines 33-40).

As to claims 14 and 16, Hunter teaches wherein applying a gain factor includes applying a gain factor that sets constants of a visible aliasing term for the incident color channel signal to zero to remove a visible aliasing term from the incident color channel signal (i.e. Hunter teaches the usage of the gain application method will remove color aliasing in the image) (see Col. 3, Lines 33-40).

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter in view of Pollard (US Patent: 7,082,218).

As to claim 4, Hunter teaches a method according to claim 2, but is silent on using low or high pass filter, instead it applied one integrated filter to create the and low pass effect. Pollard teaches wherein said low-pass component is realized by means of a low-pass filter (i.e. low-pass filter) (see Col. 4, Lines 30-50), and said high-pass component is realized by means of a high-pass filter (i.e. the process of subtracting the result of the low-pass filter result from the raw pixel data is equivalent to high-pass filtering as the low-pass filter is in fact reverse to arrived at high frequency components), said low-pass and high-pass filters being complementary (i.e. since the to operation obtain the high and low frequency components for the same pixel data they are complementary in nature with one helping to derive the other) (see Fig. 1, Col. 4, Lines 1-60).

Therefore, if would have been obvious for one of ordinary skill in the art at the invention was made to have utilized the low-pass and high-pass filter of Pollard in place of the integrated filter of Hunter, in order to create a solution that is more versatile and able to use different type of component to achieve the same effect of filtering (see Pollard Col. 4 Line 30-Col. 5 Line 44).

Response to Arguments

Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Calvin Ma whose telephone number is (571)270-1713. The examiner can normally be reached on Monday - Friday 7:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on (571)272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Calvin Ma
March 14, 2009

/Chanh Nguyen/
Supervisory Patent Examiner, Art Unit 2629